sis to be made? If the physician does approach the relatives, what responsibilities does he or she have for the effect that participation in such testing may have on their lives? As the repertoire of tests grows, these questions will need to be addressed by every physician.

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Tumors of the Urinary Tract

TUMORS OF THE KIDNEY, ureter, and bladder are a source of major morbidity and mortality in the United States. It is estimated that more than 78,000 new cases will be diagnosed in 1992, accounting for 10% and 4% of new cancers in men and women, respectively. More than 20,000 deaths will result from these disorders. These are sobering figures, but cautious optimism is justified for improved therapeutic results in the 1990s. Improvements in diagnostic techniques, clearer understanding of molecular and chromosomal markers of biologic behavior, multimodality therapeutic approaches, and use of biologic therapies give hope for both better quality of life and improved survival.

Some important advances have been made in elucidating the molecular genetics of genitourinary cancers. For example, nonrandom chromosomal abnormalities occur in patients with renal carcinomas and, in selected instances, have led to screening of family members, early detection, and cure. Bilateral renal cancers in young patients and a strong family history should alert the internist and urologist alike to the possibility of an inherited genetic abnormality. Trisomy 7 occurs in a substantial number of urologic tumors, including renal carcinomas. Similarly, von Hippel-Lindau disease may be associated with a high frequency of renal cancers. The gene for von Hippel-Lindau disease has been mapped to an oncogene locus of chromosome 3p25. This chromosomal location may be important in the genesis of other cancers, including small-cell carcinoma and certain ovarian neoplasms.

Bladder cancer, too, is associated with many chromosomal alterations, including trisomy 7, monosomy 9, and alterations in chromosome 5. In selected instances, prognosis has been correlated with specific genetic alterations of the tumor. Indeed, in some centers specific therapies for superficial bladder cancer may be influenced by these "molecular markers."

In this month's issue of the journal, two well-respected and erudite leaders in urologic cancer, Drs See and Williams, review the current status of urinary tumors.[1] They provide a detailed overview of current methods of diagnosis and treatment and highlight areas of active investigation. Two specific topics deserve further comment.

There is a continued interest in a multimodality approach to managing invasive bladder cancer. Once the neoplasm has invaded the lamina propria and involves the muscularis, radical cystectomy has been the traditional treatment of choice. This procedure causes substantial morbidity. It requires an ostomy appliance and quite often results in impotence, due to the commonly performed accompanying prostatectomy. With advances in surgical technique, both of these complications can be minimized.

Creation of continent urinary pouches, using innovative surgical techniques, now obviates the need for complicated external ostomy appliances, and more centers are now using continence-sparing urinary diversions. Likewise, improvements in the anatomic delineation of the nervous and vascular supply to the male genitalia have resulted in surgical techniques (nerve-sparing procedures) that preserve potency.

Systemic chemotherapy of metastatic bladder cancer has also advanced, and slowly improved survival rate and substantial tumor shrinkages in both the primary cancer and metastases have been documented. In some patients these beneficial effects have persisted. The rationale for using chemotherapy for muscle invasive disease, aimed at "down staging" the tumor, is to preserve the bladder while eliminating any accompanying micrometastatic disease. Multimodality therapy consisting of "up-front" chemotherapy followed by radiation therapy delivered to the primary organ may prove to be a reasonable alternative to radical cystectomy in some patients, but further studies are required.

Renal cell carcinoma, sometimes dubbed "the internist's tumor," is nicely reviewed by See and Williams. Early diagnosis greatly increases curability in this disease. Patients who are fortunate enough to have an incidental mass found during an evaluation for nonkidney-related problems generally have a more favorable prognosis when compared with those first diagnosed with paraneoplastic syndromes or symptoms related to metastases. Unfortunately, the therapy for advanced forms of renal cell cancer has not greatly improved. Biologic response modifiers, such as interleukin-2, interferon, and tumor necrosis factor, have proliferated, but most patients do not benefit greatly from use of these agents. As we begin to understand the biology of renal cell cancer better, we should begin to apply to larger patient populations the few therapies that are effective in selected patients.

In the next decade, many diverse biologic preparations will be available for treating human cancer. The use of single agents has generally been disappointing so far. Now, however, we are beginning to appreciate and to understand the multiple actions of biologic therapies and are finally able to evaluate such therapies in the clinic. We have powerful tools to diagnose and stage renal cell cancer, as reviewed so nicely in this issue of the journal. The next few years should bring correspondingly effective therapies for treating renal cancer that has spread beyond the confines of the kidney.

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